

REMARKS

This responds to the Office Action mailed on May 2, 2007. Claims 1, 17, 21, and 26 are amended. No claims are added or canceled without prejudice or disclaimer. Claims 6-16 were canceled previously without prejudice or disclaimer. As a result, claims 1-5 and 17-30 remain pending in this application.

Applicant respectfully submits that the amendments and additions to the claims are fully supported by the specification, as originally filed, and no new matter has been added. Applicant hereby respectfully requests further examination and reconsideration of the application in view of the following remarks.

Allowable Subject Matter

Claims 26-28 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant gratefully acknowledges the allowability of claims 26-28.

With respect to claims 26 and 27, Applicant has rewritten claim 26 in independent form to include the recitations of claim 24. Therefore, Applicant respectfully submits that claims 26 and 27 are now in condition for allowance.

With respect to claim 28, Applicant notes that claim 28 depends from independent claim 1, which, for at least the reasons stated below, is believed to be in condition for allowance. Therefore, Applicant respectfully submits that claim 28 is similarly in condition for allowance, based upon at least its dependence from claim 1. However, Applicant reserves the right to rewrite claim 28 in independent form during later examination of the present application or any subsequent patent applications claiming priority thereof.

§102 Rejection of the Claims

Claims 1, 2, 4, 5, and 17-20 were rejected under 35 USC § 102(b) as being anticipated by Elwell (U.S. Patent No. 5,315,154). In view of the foregoing amendment and for the reasons stated below, Applicant respectfully traverses this rejection.

Applicant has amended claims 1 and 17 to overcome this rejection. Support for the amendment to claims 1 and 17 can be found in the as-filed specification.¹ Applicant cannot find in Elwell each and every element presently recited or incorporated in claims 1, 2, 4, 5, and 17-20.

For instance, Applicant cannot find in Elwell at least the highlighted recitations of amended claim 1, as follows:

forming a metal conductive structure having a cavity, *the cavity including a cavity surface sloping upward from a low area located at a center of the cavity surface to a side wall*, the cavity surface being configured to enhance formation of convection currents within the cavity during operation of an integrated circuit, the metal conductive structure being formed with an external surface configured to thermally couple to a surface of the integrated circuit

Instead, Elwell appears to show, in Fig. 1, a cover 18 having a “bottom flat surface”² and side walls, which “extend[] vertically from the bottom surface”.³ As such, Applicant can find no cavity surface sloping upward from a low area located at a center of the cavity surface to a side wall, as recited in claim 1. Therefore, Applicant respectfully submits that the Office Action has failed to meet the burden of proof for a showing of anticipation by Elwell of amended claim 1.

Applicant cannot find in Elwell at least the highlighted recitations of amended claim 17, as follows:

forming a metal conductive structure having a cavity and *a plurality of fins on an outer surface of the metal conductive structure*, the cavity including a cavity surface having a plurality of ramp structures formed on the cavity surface, the ramp structures being configured to enhance formation of convection currents within the cavity during operation of an integrated circuit, the metal conductive structure being formed with an external surface configured to thermally couple to a surface of the integrated circuit

Instead, Elwell appears to show, in Fig. 1, fins 12b disposed within an interior space of the cover 18. As such, Applicant cannot find at least a plurality of fins on an outer surface of the metal conductive structure, as recited in amended claim 17. Therefore, Applicant respectfully

¹ See the as-filed specification, for instance, at page 4, line 22, to page 5, line 3; page 5, line 26, to page 6, line 9; and Figs. 1-3.

² See the Office Action at page 2.

³ See the Office Action at page 3.

submits that the Office Action has failed to meet the burden of proof for a showing of anticipation by Elwell of amended claim 17.

For at least these reasons, Applicant respectfully submits that Elwell does not include each and every recitation of claims 1 and 17, and, therefore, the rejection of claims 1 and 17 is improper.

Dependent claims 2, 4, and 5 depend from independent claim 1; and dependent claims 18-20 depend from independent claim 17. Accordingly, each of these dependent claims incorporates the features of one of independent claims 1 and 17. These dependent claims are accordingly believed to be patentable for the reasons stated herein with respect to claims 1 and 17. For brevity, Applicant defers (but reserves the right to present) further remarks, such as concerning any dependent claims, which are believed separately patentable.

For at least these reasons, Applicant respectfully submits that the Office Action has failed to meet the burden of proof for a showing of anticipation by Elwell of claims 1, 2, 4, 5, and 17-20. Therefore, Applicant believes claims 1, 2, 4, 5, and 17-20 to be patentable over Elwell. Accordingly, Applicant respectfully submits that the § 102(b) rejection of claims 1, 2, 4, 5, and 17-20 is improper and respectfully requests reconsideration and withdrawal of this rejection.

Claims 24 and 25 were rejected under 35 USC § 102(b) as being anticipated by Arrhenius (U.S. Patent No. 4,391,267). Applicant respectfully traverses this rejection.

Applicant cannot find in Arrhenius each and every element presently recited or incorporated in claims 24 and 25. For instance, Applicant cannot find in Arrhenius at least “forming an integrated circuit heat sink”, as recited in claim 24. Instead, Arrhenius appears to relate to:

recyclable containers for generating heat at a controlled temperature for extended periods of time. More particularly, the invention relates to containers in which a liquid melt in the containers becomes crystallized in a form for an efficient transfer of heat to a patient’s body.⁴

As such, Applicant submits that it appears that Arrhenius is completely unrelated to an integrated circuit heat sink, as recited in claim 24.

⁴ See Arrhenius at col. 1, lines 4-9.

The Office Action points to Figs. 2 and 3 of Arrhenius in contending that Arrhenius includes the recitations of claims 24 and 25. But, Fig. 2 is described as “an exploded perspective relationship, partially broken away, of the different members included in the baby mattress of FIG. 1”, and Fig. 3 is described as “a sectional view of the baby mattress of FIGS. 1 and 2 and illustrates the relative size of the crystals produced in such a mattress when the liquid melt in the mattress crystallizes to generate heat”.⁵ Applicant can find no description in Arrhenius of an integrated circuit heat sink. In fact, word searches were performed on the text of Arrhenius, and none of the phrases “integrated”, “circuit”, and “heat sink” could be found therein. Nor does the Office Action provide any rationale explaining why Arrhenius is applicable.

Arrhenius appears to be unrelated to forming an integrated circuit heat sinks, stating that “[b]y providing for the crystallization of the supercooled melt systems into an aggregate, forming particles of a small size, the mattress 22 is able to adapt to the contour of the baby so that the baby continues to remain comfortable as heat is liberated from the mattress.”⁶ Arrhenius further states:

[t]he baby mattress 22 is preferably disposed in a cover 46, which offers certain advantages when used with the mattress. The cover 46 may include an outer layer formed from a suitable material such as vinyl and an inner layer formed from a suitable material such as polyurethane so that the system is pliant. In this way, the sterility of the mattress 22 can be maintained at the same time as the baby lying on the mattress remains comfortable.⁷

Applicant submits that, as evidenced by the above-cited quotations, Arrhenius appears to be related to a baby mattress and, therefore, appears to have nothing to do with forming an integrated circuit heat sink, as recited in claim 24. Moreover, the Office Action provides no rationale for applying Arrhenius with respect to claim 24. For at least these reasons, Applicant respectfully submits that Arrhenius does not include each and every recitation of claim 24, and, therefore, the rejection of claim 24 is improper.

Dependent claim 25 depends from independent claim 24. Accordingly, dependent claim 25 incorporates the features of independent claims 24. Dependent claim 25 is accordingly believed to be patentable for the reasons stated herein with respect to claim 24. For brevity,

⁵ See Arrhenius at col. 4, lines 1-7.

⁶ See Arrhenius at col. 6, lines 50-55.

⁷ See Arrhenius at col. 7, lines 42-50.

Applicant defers (but reserves the right to present) further remarks, such as concerning any dependent claims, which are believed separately patentable.

For at least these reasons, Applicant respectfully submits that the Office Action has failed to meet the burden of proof for a showing of anticipation by Arrhenius of claims 24 and 25. Therefore, Applicant believes claims 24 and 25 to be patentable over Arrhenius. Accordingly, Applicant respectfully submits that the § 102(b) rejection of claims 24 and 25 is improper and respectfully requests reconsideration and withdrawal of this rejection.

§103 Rejection of the Claims

Claims 3, 21, and 23 were rejected under 35 USC § 103(a) as being unpatentable over Elwell in view of Salyer (U.S. Patent No. 5,370,814). Applicant respectfully traverses this rejection, in view of the foregoing amendment and for the reasons stated below.

For reasons analogous to those stated above, Applicant cannot find in Elwell each and every recitation of claims 3, 21, and 23. For instance, Applicant cannot find in Elwell at least the highlighted recitations of amended claim 21, as follows:

forming a metal conductive structure having a cavity and a ***plurality of fins on an outer surface of the metal conductive structure***, the cavity being configured to enhance formation of convection currents within the cavity during operation of an integrated circuit, the metal conductive structure having a substantially flat external surface configured to thermally couple to a surface of the integrated circuit

Support for the amendment to claim 21 can be found in the as-filed specification.⁸ Even assuming, for the sake of argument, that Elwell and Salyer are properly combinable, Salyer does not remedy at least the apparent deficiencies of Elwell highlighted above. For instance, Applicant cannot find in Salyer “a plurality of fins on an outer surface of the metal conductive structure”, as recited in amended claim 21. For at least these reasons, Applicant respectfully submits that Elwell and Salyer do not include each and every recitation of claim 21, and, therefore, the rejection of claim 21 is improper.

Dependent claim 3 depends from independent claim 1, and dependent claim 23 depends from independent claim 21. Accordingly claims 3 and 23 incorporate the features of one of

⁸ See the as-filed specification, for instance, at page 4, line 22, to page 5, line 3, and Figs. 1-3.

claims 1 and 21, respectively. These dependent claims are accordingly believed to be patentable for at least the reasons stated herein. For brevity, Applicant defers (but reserves the right to present) further remarks, such as concerning any dependent claims, which are believed separately patentable.

Therefore, for at least the reasons stated above, Applicant respectfully submits that claims 3, 21, and 23 are allowable and request reconsideration and withdrawal of the rejection of claims 3, 21, and 23.

Claim 29 was rejected under 35 USC § 103(a) as being unpatentable over Elwell in view of Hanrahan (U.S. Patent No. 5,945,217). Claim 22 was rejected under 35 USC § 103(a) as being unpatentable over Elwell and Salyer and further in view of Hanrahan. Applicant respectfully traverses these rejections in view of the foregoing amendment.

Claim 29 depends from claim 17, and claim 22 depends from claim 21. As stated above, Applicant believes claims 17 and 21 are in condition for allowance. Therefore, Applicant believes claims 29 and 22 are similarly in condition for allowance, based upon at least their dependence from one of claims 17 and 21. For brevity, Applicant defers (but reserves the right to present) further remarks, such as concerning any dependent claims, which are believed separately patentable.

Therefore, Applicant respectfully submits that claims 29 and 22 are allowable and requests reconsideration and withdrawal of the rejection of claims 29 and 22.

Claim 30 was rejected under 35 USC § 103(a) as being unpatentable over Arrhenius in view of Hawe (U.S. Patent No. 4,470,917). Applicant respectfully traverses this rejection.

Claim 30 depends from claim 24. As stated above, Applicant believes claim 24 is in condition for allowance. Therefore, Applicant believes claim 30 is similarly in condition for allowance, based upon at least its dependence from claim 24. For brevity, Applicant defers (but reserves the right to present) further remarks, such as concerning any dependent claims, which are believed separately patentable.

Therefore, Applicant respectfully submits that claim 30 is allowable and requests reconsideration and withdrawal of the rejection of claim 30.

RESERVATION OF RIGHTS

In the interest of clarity and brevity, Applicant may not have equally addressed every assertion made in the Office Action, however, this does not constitute any admission or acquiescence. Applicant reserves all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicant does not admit that any of the cited references or any other references of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicant timely objects to such reliance on Official Notice, and reserves all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all rights to pursue any canceled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claim, as required by MPEP § 821.04.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612-359-3275) to facilitate prosecution of this application.


If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

DAMION T. SEARLS ET AL.

By their Representatives,
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
Minneapolis, Minnesota 55402
612-359-3275

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By 
Michael P. Horvath
Reg. No. 57,235

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 29th day of May 2007.

Amy Moriarty
Name


Signature